

## A REVIEW OF THE SPECIES OF *PTILODACTYLA* IN THE UNITED STATES WITH DESCRIPTIONS OF THREE NEW SPECIES (COLEOPTERA: PTILODACTYLIDAE)<sup>1,2</sup>

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**ABSTRACT:** Nine species of *Ptilodactyla* from the United States are discussed, with three being described as new. Two species are related to *angustata* Horn (*equilobata* Chapin, and *exotica* Chapin) and five species are related to *serricollis* (Say) (*isolaba* n. sp., *carinata* Johnson and Freytag, *nanoderma* n. sp., *acuta* Johnson and Freytag, and *hyperglotta* n. sp.). Distribution records are included for each species and a neotype is designated for *Ptilinus serricollis* Say. A key to all species is included.

Six species of *Ptilodactyla* are known from the United States (Johnson and Freytag, 1978). Three new species are added at this time, bringing the total to nine. Since records of this family are so few and many areas are not well collected, we believe there may still be several more undescribed species in North America.

All species of *Ptilodactyla* are very similar in size, coloration, and external body characteristics, so determinations are currently based on male genitalia, which readily separate all known species. Previous workers (Chapin, 1927; Horn 1880) have used the shape of the tarsal claws. We used tarsal claws (Johnson and Freytag, 1978) but found that the angle at which one views them leads to variable interpretations and makes comparisons difficult. We therefore have based our determinations only on the male genitalia. There are slight variations in the male genitalia but these do not interfere with identifications. Most variations are the position and length of the lateral lobes (parameres). These may cross or bend laterally and they may be the same length as the median lobe (aedeagus) or somewhat shorter. The illustrations (Figure 7-12) used in this paper place these lobes in the same position and represent a typical specimen of each species.

Females are very difficult to properly identify and were excluded from our study. Many have been collected and are in collections but few can be associated to the proper species.

<sup>1</sup>Received September 22, 1981.

<sup>2</sup>The investigation reported in this paper (No. 81-7-181) is in connection with a project of the Kentucky Agricultural Experiment Station and is published with approval of the Director.

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We also designate a neotype for *P. serricollis* (Say) at this time to stabilize this name. There has been some confusion in the past as to which species this name refers and there may be additional species found which may be closely related to it.

#### KEY TO THE MALES OF *PTILODACTYLA* OF NORTH AMERICA

1. Genitalia less than four times as long as wide ..... (*angustata* group) 2  
    Genitalia more than four times as long as wide ..... (*serricollis* group) 4
2. Lateral lobes truncate at apex ..... *equilobata* Chapin  
    Lateral lobes pointed at apex ..... 3
3. Lateral lobes closely appressed to median lobe ..... *exotica* Chapin  
    Lateral lobes capable of being deflexed near base ..... *angustata* Horn
4. Median lobe with dorsal, subapical, fleshy inner flaps (Fig. 7) ..... 5  
    Median lobe without dorsal, subapical fleshy inner flaps (*nanoderma* has very small inner flaps, usually not visible) (Fig. 9) ..... 6
5. Median lobe with apex asymmetrical (Fig. 7) ..... *serricollis* (Say)  
    Median lobe with apex symmetrical (Fig. 8) ..... *isoloba* n. sp.
6. Median lobe with apex asymmetrical (Fig. 10) ..... *nanoderma* n. sp.  
    Median lobe with apex symmetrical (Fig. 9) ..... 7
7. Median lobe with apex rounded, with a subapical dorsal process (Fig. 12) ..... *hyperglotta* n. sp.  
    Median lobe with apex narrow, without a subapical dorsal process ..... 8
8. Median lobe with apex boat-shaped (Fig. 9) ..... *carinata* Johnson & Freytag  
    Median lobe with apex not boat-shaped (Fig. 11) ..... *acuta* Johnson & Freytag

#### *Angustata* Group

This group of three species is well characterized in Chapin's paper (1927) and he gives good illustrations of the male genitalia of each.

#### *Ptilodactyla angustata* Horn

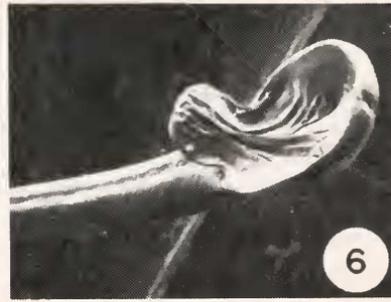
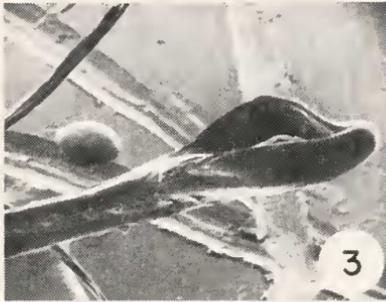
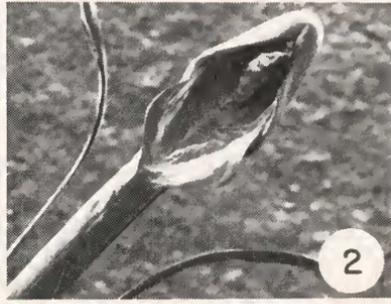
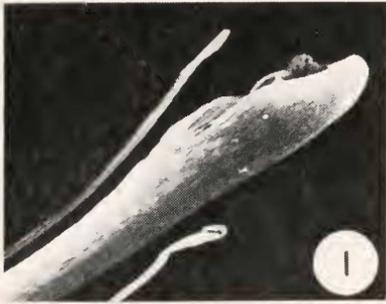
*Ptilodactyla angustata* Horn 1880, p. 90; Chapin 1927, p. 243.

This species is now known from the following states: Florida, Georgia, Kentucky, Louisiana, Maryland, Missouri, North Carolina, Pennsylvania, Tennessee, Texas, Virginia, and West Virginia.

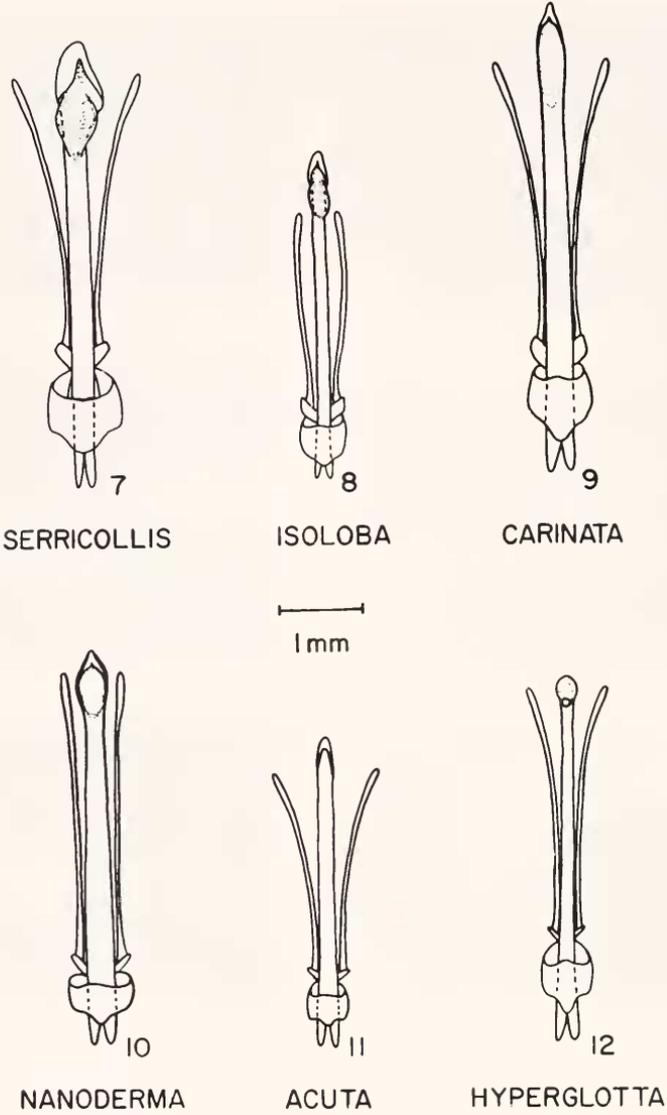
#### *Ptilodactyla equilobata* Chapin

*Ptilodactyla equilobata* Chapin 1927, p. 245.

This species is known only from Texas.



Figs. 1-6, *Ptilodactyla* spp., apex of male genitalia. Fig. 1: *P. isoloba* n. sp., lateral view. Fig. 2: *P. isoloba* n. sp., dorsal view. Fig. 3: *P. nanoderma* n. sp., lateral view. Fig. 4: *P. nanoderma* n. sp., dorsal view. Fig. 5: *P. hyperglotta* n. sp., lateral view. Fig. 6: *P. hyperglotta* n. sp., dorsal view. Figs. 1-5, 120x Fig. 6, 240x.



Figs. 7-12, Dorsal view of male genitalia of *Ptilodactyla* spp., Fig. 7, *P. serricollis* (Say); Fig. 8, *P. isoloba* n. sp.; Fig. 9, *P. carinata* Johnson and Freytag; Fig. 10, *P. nanoderma* n. sp.; Fig. 11, *P. acuta* Johnson and Freytag; Fig. 12, *P. hyperglotta* n. sp. All drawn to the same scale.

*Ptilodactyla exotica* Chapin

*Ptilodactyla exotica* Chapin 1927, p. 246.

This species is known only from the northeastern states from Illinois to Washington, D.C.

*Serricollis* Group*Ptilodactyla serricollis* (Say)

(Figure 7)

*Ptilinus serricollis* Say 1823, p. 186.

*Ptilodactyla serricollis* Horn 1880, p. 90; Chapin 1927 (in part), p. 242; Spilman 1961: p. 105; Johnson and Freytag 1978, p. 125.

This species was discussed by Chapin (1927), who accompanied his description with a line drawing of the male genitalia. This drawing indicated a median lobe of the penis that was symmetrical. Johnson and Freytag (1978) further discussed this species and included scanning electron micrographs of the male genitalia. These micrographs showed a median lobe that was strongly expanded and distinctly asymmetrical. After further study of several hundred specimens, we have concluded that the species with the larger and more asymmetrical median lobe of the penis is *serricollis*. This species is quite common and its distribution includes the type locality (Missouri) as indicated by Say (1823) in his original description. For clarification of *serricollis* we are hereby specifying a male specimen labeled "Advance, Missouri, corn field, June 9, 1919, J.R. Painter" (Type No. 100316, USNM) as the neotype of *Ptilinus serricollis* Say. The other species with the symmetrical median lobe of the penis is uncommon and appears to be distributed in the northeast. We describe it as a new species (*isoloba* n. sp.) in this paper.

We have seen many specimens of *serricollis* from the following states: Arkansas, D.C., Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Texas, Virginia, and West Virginia. Also one male was seen from Ontario, Canada.

*Ptilodactyla isoloba*, new species

(Figures 1, 2 & 8)

*Ptilodactyla serricollis* Chapin 1927 (in part), p. 242.

Similar to *serricollis* in all aspects, except male with median lobe of penis symmetrical.

Tarsal claws of male forelegs with inner portions of unguis about one-half length of claws.

Male genitalia with median lobe of penis expanded symmetrically at apex, with two smaller inner flaps proximal to lateral expansions. Lateral lobes of penis sub-equal in length of median lobe, setiform.

Holotype male: Erlanger, Kentucky, at light, June 8, 1980, Victor Johnson. (Type No. 100315, USNM). Paratypes: Same data as type, except one male, June 11, 1980; one male,

August 9, 1981; one male. August 15, 1981; one male, Rockhaven, Kentucky. July 22, (no year), J. Soltau; one male, Cincinnati, Ohio, August 19, (no year), H. Soltau; one male, Wayne, Co., New York, August 10, 1950, Shoemaker; one male, Breton Bay, Maryland, July 13, 1923, H.S. Barber; and one male, Plummers Island, Maryland, July 30, 1919, H. Barber. The first three paratypes in the University of Kentucky Collection and the remainder in the U.S. National Museum.

Note: This species was illustrated (as *serricollis*) by Chapin from specimens from Pennsylvania. No Pennsylvania specimens have been seen by us, but this state is within the distribution of this species. It does not occur in Missouri (no specimens collected there) so could not be *serricollis* as described by Say.

We have also seen one questionable male specimen of this species in the U.S. National Museum. It is labeled "Albuq. N.M., Wickman, Wickman Coll. 1933". This appears to be a mislabeled specimen.

*Ptilodactyla nanoderma*, new species

(Figures 3, 4, & 10)

Similar to *isoloba* in all aspects, except male having median lobe of penis without the pair of inner flaps.

Tarsal claws of male forelegs with inner portions of unguis about one-half length of claws.

Male genitalia with median lobe of penis nearly symmetrically expanded at apex, and usually lacking the pair of inner flaps proximal to the expanded apex. Lateral lobes of penis sub-equal to median lobes, setiform.

Holotype male: Osborne, Indiana, June 4, 1911, E. Lilijebad, (Type No. 100313, USNM). Paratypes: Two males, same data as holotype; one male, LaBelle, Florida, July 16, 1939; Oman; one male, Missouri, July, collection of C.V. Riley; one male, N. Illinois, collection of J.B. Smith. The first paratype in the University of Kentucky collection and the remainder in the U.S. National Museum.

Note: This species differs from *serricollis* by the absence of the inner flaps on the median lobe of the male penis. It is also close to *carinata* but differs by having the median lobe more abruptly expanded near the apex.

*Ptilodactyla carinata* Johnson and Freytag

(Figure 9)

*Ptilodactyla carinata* Johnson and Freytag, 1978, p. 126.

This is a common species in the eastern states and has a wide distribution. It is now known from the following states: Alabama, Arkansas, D.C., Florida, Georgia, Kansas, Kentucky, Louisiana, Maryland, New Jersey, New York, Pennsylvania, Texas, and West Virginia.

*Ptilodactyla hyperglotta*, new species

(Figures 5, 6, & 12)

Similar to *serricollis* in overall characteristics, but with the median lobe of male penis having a dorsal subapical tongue-like process.

Tarsal claws of male forelegs with inner portion of unguis about one-half length of claws.

Male genitalia with median lobe of penis symmetrically expanded at apex into a rounded spoon-shaped tip. At the proximal end of spoon-shaped expansion a tongue-like process extends dorsad.

Holotype male: Near Brownsville, Texas, November 22, 1967, A & M.E. Blanchard (Type No. 100314, USNM). Paratypes: all Brownsville, Texas, three males, same data as holotype; three males, at light, April 4, 1908, D.K. McMillan; one male, May 15, 1934, J.N. Knull; and one male, May 15, 1935, J.N. Knull. The first paratype in the University of Kentucky Collection, the last two paratypes in the Ohio State University Collection, and the remainder in the U.S. National Museum.

#### ACKNOWLEDGMENTS

We thank the following persons: C.A. Triplehorn, Ohio State University Collection (OSUC); T.R. Yonke, University of Missouri Collection (UMRM); and J.M. Kingsolver, U.S. National Museum (USNM), for the loan of material examined, and P. Southgate for assistance with the SEM photographs.

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